CRESTMONT FARM SAFE HARBOR AGREEMENT FOR THE TAYLOR'S CHECKERSPOT BUTTERFLY

1. INTRODUCTION

Safe Harbor Agreements (Agreements) are voluntary arrangements between the U.S. Fish and Wildlife Service (Service) and cooperating non-Federal landowners intended to benefit federally listed endangered and threatened species while giving the landowners assurances that no additional future regulatory restrictions under the Endangered Species Act (ESA) will be imposed on the enrolled lands over the term of the Agreement. The purpose of this Agreement is to undertake proactive conservation and restoration actions designed to benefit the federally listed as endangered Taylor's checkerspot butterfly **(***Euphydryas editha taylori*), hereafter referred to as the "Covered Species" or "Taylor's checkerspot."

This Agreement is between Crestmont Farm LLC (Crestmont Farm) and the Service (collectively the 'Parties') and identifies conservation actions to be taken to benefit Taylor's checkerspot on lands owned by Crestmont Farm in Benton County, Oregon. The Service's Oregon Fish and Wildlife Office (OFWO) will administer the Agreement. Crestmont Farm enters this Agreement with the intent of receiving a section 10(a)(1)(A) enhancement of survival permit under the ESA to address any incidental take of Taylor's checkerspot that may occur while engaging in conservation activities or modifying habitat towards the end of the Agreement term to return population levels and/or habitat conditions back to those agreed upon as "baseline." This Agreement follows the Service's Safe Harbor Agreement policy (64 FR 32717) and regulations (64 FR 32706).

2. BACKGROUND

ESA listing

The Taylor's checkerspot was listed as an endangered species on October 3, 2013, throughout its range in Washington, Oregon, and British Columbia (78 FR 61452). Critical habitat was also designated in Washington and Oregon (78 FR 61506) and about 16.6 acres of critical habitat were designated on Crestmont Farm property. Threats identified in the listing included: habitat loss from conversion to other uses (agriculture); habitat degradation associated with non-native grass invasion; succession or reversion to forest from existing grassland conditions; loss of historically occupied locations resulting in population isolation and a reduction in the geographic distribution of the species; and, existing and likely future habitat fragmentation that reduces the likelihood of population expansion and genetic exchange.

Life History

Taylor's checkerspots typically occupy open grassland habitat found on prairies, grassland bluffs, and grassland openings within a forested matrix. Taylor's checkerspots produce one brood per year. Adults in Oregon primarily lay eggs on or near narrow-leaf plantain (*Plantago lanceolata*) in April and May (although they have recently been observed laying, and larvae

feeding on, introduced golden paintbrush (*Castilleja levisecta*) along with the plantain at Beazell Memorial Forest). Eggs hatch and the larvae develop rapidly, feeding on their host plant. They stop feeding, take cover under ground-level vegetation, and enter diapause (a period of inactivity) typically in mid- to late-June. They begin feeding again in January or February until they pupate around March, and then emerge as adults as early as mid-March and potentially through May, depending upon the weather. An unknown proportion may remain in a larval state through a second diapause and transform to adults the following year. An individual adult flight period lasts about 10 to 14 days. Common adult nectar plants in Oregon include: wild strawberry (*Fragaria virginiana*); false dandelion (*Hypochaeris radicata*); *Lomatium utriculatum*; rosy plectritus (*Plectritis congesta*); mariposa lily (*Calochortus tolmiei*); and,western butterup (*Ranunculus occidentalis*). It is important to note that while Taylor's checkerspot adults are readily observable while flying, they are present and relatively sedentary throughout the rest of the year while in their other life stages; therefore, they are considered to occupy an area year-round. They are especially vulnerable to direct impacts while in their more sedentary stages prior to emerging as adults (i.e., egg, larva, pupa).

Distribution

The number of locations occupied by Taylor's checkerspots in Oregon has declined from about 13 historically known to two currently. Taylor's checkerspots were formerly reported to exist in large numbers at some of their historic sites within the Willamette Valley in Lane, Benton, and Polk Counties (Dornfeld 1980, p. 73). In 1999, Taylor's checkerspots were discovered on a portion of Crestmont Farm property that is maintained as a powerline corridor for the Bonneville Power Administration (BPA) and Consumers Power. In 2004, a second population was discovered on grassland openings within the Beazell Memorial Forest. These two Taylor's checkerspot locations are both in Benton County and are currently the only occupied areas known in Oregon.

The Willamette Valley ecoregion of Oregon includes the Willamette Valley and adjacent foothills, bounded on the west by the Coast Range and on the east by the Cascade Range. It is estimated that just over one million acres of historical native grasslands existed in the Willamette Valley prior to 1850. Open prairie conditions were maintained in large part due to burning by the Kalapooya Indians for food production that effectively reduced the establishment of woody vegetation. Taylor's checkerspots were likely once distributed beyond the 13 known historical sites across the historical native prairie. However, over the last century and a half, approximately 99 percent of the known prairie area has been lost due to fire suppression, invasive species encroachment, and land conversion to agricultural and urban uses.

About 96 percent of the Willamette Valley ecoregion is in private ownership (ODFW 2006). The conservation and recovery of the Taylor's checkerspot will rely, in large part, on the voluntary actions of many non-Federal landowners to conserve, enhance, restore, reconnect and actively manage native prairie habitats that support this species.

3. PURPOSE AND NEED FOR THE AGREEMENT

The primary objective of this Agreement is to support voluntary actions designed to provide a net benefit to the Taylor's checkerspot in part by establishing management objectives to maintain and improve existing habitat conditions, and to create habitat conditions that will attract and

support additional checkerspots. Conserving existing Taylor's checkerspot populations and actively maintaining, enhancing and expanding the size of existing butterfly habitat patches will be essential for recovery. In addition, enhancing habitat connectivity by expanding habitat and supporting pathways for movement will improve the opportunities for individual Taylor's checkerspots to reach other occupied or non-occupied suitable habitats for reproduction, recolonization, and further dispersal. In return for its voluntary conservation efforts, Crestmont Farm will receive assurances that allow them to return their enrolled property to the agreed upon baseline conditions for the butterfly at the end of the Agreement or permit term. Without these Agreement and permit assurances, it is assumed that the subject lands would not be used to contribute to the conservation and recovery of the Taylor's checkerspot in the foreseeable future.

4. COVERED SPECIES

This Agreement covers the Taylor's checkerspot butterfly, federally listed as endangered.

5. DESCRIPTION OF COVERED LANDS

The physical area covered by this Agreement ("covered lands" or "enrolled" areas) is found within an approximately 26.8 acre portion of tax lot 116250000200 (see Map 1) that lies about five miles west of the City of Corvallis and three miles north of the City of Philomath and is located on the southern edge of the geographic area commonly referred to the Cardwell Hills. The Crestmont Farm property contains a large segment (over 80 percent) of the known Taylor's checkerpot population at this location, but there are smaller segments of occupied habitat on adjoining private land. However, these have been in decline recently. This area is one of only two occupied sites in Oregon, and currently contains about a third of the population in Oregon. The limited number of occupied sites, and the proportion of known individuals makes this property an important contributor to the recovery of this species in Oregon at this time. The covered lands largely fall within an east-northeast/west-southwest-oriented powerline corridor easement area (see Map 1). There are three sets of suspended powerlines within this corridor along with a graveled maintenance road that runs its length. The approximate covered land dimensions are 3,700-feet-long and 300-feet-wide. Current vegetative conditions are typical of powerline corridor areas and include a mixture of grassland, shrubs and young trees, with a fairly linear border of well-stocked conifer forest. The primary cover type is grassland, with thickets of younger Oregon white oak (*Quercus garryana*) and Douglas-fir (*Pseudotsuga menziesii*), and patches of Himalayan blackberry (*Rubus armeniacus*), poison oak (*Toxicodendron diversilobum*), and serviceberry (*Amelanchier alnifolia*). There are also areas of encroachment of Scot's broom (*Cytisus scoparius*). Most of the grass cover consists of non-native pasture grasses, including the highly invasive false brome (*Brachypodium sylvaticum*).

A 16.6 acre portion of Taylor's checkerspot designated critical habitat subunit 4D is found within the covered lands. The essential physical and biological features within portions of the covered lands are in relatively poor condition and are likely to degrade further without targeted management to address invasive species and woody species development.

6. BASELINE DETERMINATIONS

The baseline is a reflection of the listed species' presence, habitat use, and/or habitat conditions on the covered lands. The baseline can be defined in terms of the number of individuals, acres of habitat, vegetative characteristics, or some combination thereof, and is established by mutual agreement of the Parties. Once a baseline is established, it needs to be maintained for the duration of the Agreement. If the species and/or its habitat are not present on the covered lands, then the baseline would be 'zero'. Where use of the covered land is not currently subject to any take prohibition restriction under section 9 of the ESA, there are no baseline responsibilities.

For any Taylor's checkerspots that may occur within the area covered by this Agreement, the Permittee is not released from the responsibility of avoiding "take" of Taylor's checkerspots that are considered part of the baseline under this Agreement, unless incidental take occurs while engaging in habitat enhancement activities that are not intended to reduce the baseline.

The voluntary actions contained herein are intended to maintain and to increase the area and quality of occupied habitat (i.e., establish conditions above and beyond the baseline). Under this Agreement the portions of the covered lands that are considered occupied by Taylor's checkerspots are designated as baseline and are shown in Map 2. The total area amounts to 1.9 acres, which shall represent the baseline acres of habitat regardless of configuration. The number of Taylor's checkerpots will not be used as the baseline due to the wide year-to-year, and within year variability of the population. This is typical of insects. The observed variation in counts has not been tied to any land management activities in the covered area. Furthermore, a count of Taylor's checkerspot larvae, if possible, could be 200 or more times the number of adults in an given year since an individual adult female can lay from 200-400 eggs or more. During the period from 2010-2017, the adult butterfly counts on the covered lands varied from about 200 to a little over 700 individuals, which conservatively translates to 10,000 to 70,000 eggs being laid, assuming half the population is composed of females. Not all eggs hatch and a large proportion of larvae die before reaching the adult butterfly stage which results in the much smaller adult population counts. These numbers illustrate the yearly variation represented by the 1.9 acre baseline area, and that can be assumed to occur outside the baseline area on an equivalent area basis for any successful habitat development.

The designated baseline areas contain their larval host-plant (narrow-leaf plantain) and are those in which Taylor's checkerspots lay their eggs and where the larvae reside until pupation. Not all areas that contain narrow-leaf plantain are considered baseline since they may not be used by Taylor's checkerspots. This Agreement allows for beneficial actions to occur within and outside of the baseline areas to achieve a net conservation benefit. At the end of the Agreement term, Crestmont Farm may return the covered lands to the agreed upon baseline conditions.

7. MANAGEMENT CONSIDERATIONS

The purpose of the Agreement is to increase the distribution and abundance of the Taylor's checkerspot by improving the quantity and quality of habitat for existing populations, and to promote natural movement and gene transfer among existing populations through the enhancement of unoccupied suitable grassland habitat. Enhancing habitat connectivity will enable potentially isolated populations to interbreed and maintain their genetic diversity. Providing additional habitat areas can also increase the likelihood of persistence of the Taylor's

checkerspot by offering microhabitat variations that may provide an adaptive range of habitat suitability and function that is not equally adversely affected by weather, plant community changes, predator populations, etc., and reducing the likelihood of a catastrophic event at one location from extirpating the species.

Most remaining grassland and oak savanna communities in Oregon are dominated by persistent, non-native pasture grasses that will require active management to reduce their density and cover in order to increase potential habitat suitability for the Taylor's checkerspot. A variety of tall grasses (e.g., tall fescue (*Festuca arundinacea*), tall oatgrass (*Arrhenatherum elatius*), and orchard grass (*Dactylis glomerata*)), and herbaceous and woody species, including many that are invasive and/or non-native, shade and displace suitable nectar and larval host plants. In addition, dense stands of tall grasses may reduce the habitat suitability by creating structural conditions that discourage Taylor's checkerspot use. Taylor's checkerspot adults spend considerable amounts of time crawling on vegetation and tend to lay eggs where shorter stature and less dense vegetation surrounds larval host plants.

In areas that currently receive little or no management, encroachment by trees (e.g., Douglas-fir and hawthorn (*Crataegus* sp.)) and shrubs (e.g., Himalayan blackberry, Scot's broom, poison oak, snowberry (*Symphoricarpos albus*), serviceberry) may occur and can result in succession out of a grass-dominated community eventually to a forested/shrub community that will render that area unsuitable for the Taylor's checkerspot.

Since it will be difficult to eradicate the undesirable grasses from the landscape, and bordering woody vegetation is often likely to encroach into open spaces, periodic, active management will be required to develop desired habitat conditions. Typical management practices include mowing, herbicide treatment, discing, weed pulling, tree felling, and prescribed burning. Each of these management options need to be conducted under criteria that minimize or avoid direct and indirect impacts to the Taylor's checkerspot. In cases where there is not a sufficient underlying component of larval host plants and adult nectar sources, supplemental planting will also be needed after control measures for undesirable vegetation are undertaken. Subsequent management will likely be needed to maintain desired habitat conditions.

An additional management consideration is needed with the use and maintenance of a single-lane gravel road that runs the length of the covered lands. The approximately 10-11 foot-wide, single lane road is used to access the covered lands and other adjoining ownerships. The gravel road is also used by the utilities and their contractors to inspect and repair the suspended electric transmission lines and support poles. Road maintenance primarily involves placement of gravel to provide a level, all weather surface and vegetation mowing and control on and beside the graveled road bed. The gravel road has limited vegetation cover, but does harbor varying densities of narrow-leaf plantain. The road bed and its use and maintenance create conditions that appear to encourage establishment of narrow-leaf plantain, and lower densities and growth heights of competing grasses compared to the adjacent landscape. The portion of the gravel road that runs through the baseline area was included as part of the baseline because of the presence of the plantain and common use by Taylor's checkerspot larvae. The use and maintenance of the gravel road creates both suitable habitat conditions as well as an area of potential impact. Vehicles travelling the road and road maintenance activities may result in the death of larvae

through crushing by tires, gravel placement, or foot-traffic, especially in the post-diapause active period. The gravel road has been used and maintained for many years and those actions are not known to be a significant detriment to the Taylor's checkerspot population. However, avoidance measures during February and March, when possible, can reduce the amount of potential impact to feeding or travelling larvae.

8. CONSERVATION MEASURES

The Service will coordinate a variety of management activities with Crestmont Farm pursuant to this Agreement. These management activities generally include the following: 1) controlling/reducing non-native grasses; 2) controlling/reducing woody vegetation encroachment; 3) increasing the density and diversity of host plant, native nectar species, and other native species; and, 4) maintaining improved habitat conditions.

The on-the-ground actions and best management practices listed below may occur to restore habitat under this Agreement. Activities to be carried out will be determined on an annual basis and as funds become available and can be chosen selectively and incorporated. Annual management plans will include: a descriptions of the specific actions to be implemented on the covered lands, with a timeline for implementation and the responsible party or parties for each action; a description of how the actions to be implemented are expected to provide a net conservation benefit for the Taylor's checkerspot; and, a description of any other plans or agreements that may be related to the implementation of activities on the covered lands, or relevant to the expected benefits to the covered species (e.g, BPA vegetation management activities, Partner's for Fish and Wildlife restoration activities, etc.).

All of the activities are intended to benefit Taylor's checkerspots, and care will be taken with those activities to minimize short-term adverse effects (e.g., trampling, compressing, vehicle (cars, trucks, ATV's) traffic, etc.) whenever possible. When Taylor's checkerspots are not known to occupy an area, any of these activities may occur at any time of the year that they best prove effective, provided they have no measurable impact on adjacent or nearby occupied areas. If an area becomes occupied either naturally or seemingly as a result of any management action undertaken, then restrictions to avoid or minimize continued management actions may be put in place in order to contribute to providing a net conservation benefit to the Taylor's checkerspot. It is an objective that baseline conditions will be maintained or improved through implementation of any conservation measure.

Management activities and plans on the covered lands that comply with the guidelines and provisions of the applicable PROJECTS Biological Opinion (USFWS 2016) may be pursued without additional review or approval of the Service.

A. Removal of invasive/non-native species and woody vegetation

i. <u>Manual treatments</u>

Manual maintenance typically involves eliminating invasive and woody vegetation by hand or with hand tools such as lopping shears, shovels, hoes, weed wrenches,

trowels, and weed pullers. These activities may be implemented year-round. However, the work will be conducted between August 1 and January 15 whenever possible in habitat occupied by the Taylor's checkerspot. Manual removal of undesired shrubs, trees, or other woody vegetation may occur on all portions of the covered lands each year.

ii. Mechanical treatments - ground-level

In some situations, the use of mechanical treatments may be more appropriate than manual techniques, e.g., for controlling dense stands of tall grasses or for releasing competition around larval host and adult nectar plants. Mechanical maintenance techniques include: mowing, line trimming, grubbing, girdling trees, raking, and chain saw or mechanical removal of woody species. Mechanical maintenance activities in occupied Taylor's checkerspot habitat will primarily be conducted when the larva are in diapause (i.e., August 1 through January 15), unless the Service determines that the techniques and locations of the treatments will have no adverse effect on Taylor's checkerspot. Mechanical treatment to remove woody vegetation and other competing plants may occur on up to one-third of the occupied Taylor's checkerspot habitat on the covered lands each year. One hundred percent of the area of those sites may be mechanically treated over time.

Early spring tractor mowing (i.e., March 1 through May 15) may be used for management purposes only in habitat not occupied by the Taylor's checkerspot butterfly (except road maintenance as provided elsewhere in this Agreement). When mowing occupied Taylor's checkerspot habitat, mowing may be conducted throughout sites while Taylor's checkerspot larvae are in diapause (generally August 1 to January 15). Mowers will be set to a blade height high enough to minimize the risk of gouging the ground, harming low-stature native plants, and impacting butterfly larvae (generally at least 4 to 6 inches). Rubber-tracked mowers are preferred over wheeled mowers whenever practicable.

Line trimmers, which provide more precision than mowers, may be used in occupied habitat in early spring or early fall when necessary. Care will be taken to minimize the risk of injuring desired plants and butterfly larvae with the line trimmers.

Raking may be used to reduce thatch build up. Rakes may be tractor-mounted or hand-held, and can help to gather and loosen thatch and leaf litter. Thatch that exceeds 10 to 20 percent cover can reduce native plant species diversity or rare plant habitat availability, and may also increase small mammal populations that damage native plants. Efforts will be made to avoid disturbing underlying soil. At sites supporting Taylor's checkerspot populations, no more than one quarter of the occupied habitat may be raked annually. The raking in occupied areas may only occur when larvae are in diapause, generally from August 1 – January 15. Tractors shall be equipped with rubber tracks whenever practicable to minimize soil compaction. Thatch and leaf litter will be disposed outside of grassland area habitats when practicable.

iii. Mechanical treatments – tilling, plowing, and discing

Tilling, plowing, and discing may be used as management activities to kill or suppress invasive plant species and prepare sites for native vegetation establishment in areas that have been heavily infested with non-native and invasive plant species. These activities will not be conducted where they may adversely affect the Taylor's checkerspot.

A plow or tractor with a tiller attachment may be used to turn the soil up to 12 inches deep in the treatment area. This action disturbs the root system of the weeds and exposes them to sunlight, reducing the viability of the weed species. It also brings up the seed stock and promotes weed growth, which can then be treated by further discing or herbicide applications. Additional tilling and discing applications may be needed to promote and then suppress new weed growth, reducing the weed seed stock in the soil. Once tilling, plowing and disking activities have been completed, the treated area will be further prepared by packing the soil to eliminate air pockets and create a surface crust that can help maintain surface moisture, and the area will be seeded or planted with native vegetation, especially potential nectar plants and native, short stature grasses. Larval host plants may also be seeded.

iv. Prescribed fire

In the fall (i.e., mid-August through November), prescribed burns may be performed to discourage woody plant growth, remove accumulated leaf litter and duff, and encourage the spread of native prairie grasses and forbs. An annual burn unit (ABU) will be determined based on the individual site conditions and population sizes. Prescribed fire may be used to manage grassland habitats each year, but the area that may be burned in any one year is limited on sites occupied by Taylor's checkerspot as described below.

The ABU for sites supporting 300 or more adult Taylor's checkerspot may be a maximum of one-third of the occupied habitat. The ABU for sites with less than 300 adult Taylor's checkerspot may be up to a maximum of one-fifth of the occupied habitat. Once burned, a unit will not be re-burned for at least three years so that butterfly or plant populations may rebuild. The use of fire for habitat maintenance inherently increases the risk of accidentally impacting more habitat than originally intended. The responsible Parties will plan to burn approximately five percent less than the annual maximum so that the maximum allowable ABU will not be exceeded.

Large woody plants will be removed before burning to reduce fuel loads if feasible. Ignition of burn areas will be by hand using propane, fuses, or drip torches. Pre-burn hose lays, wet-lining, or fire retardant foam will be used to control and suppress fires. However, fire retardant chemicals will be used sparingly near occupied habitats, and will typically not be used where they could enter a watercourse (generally no closer to water than 40 meters [120 feet]). Prescribed burns will be conducted in a manner

consistent with state and local smoke management regulations. Vehicles will not be operated in areas where Taylor's checkerspot occur. Additionally, where patch size allows, butterfly refugia within burn units will be protected with a fire break and/or watered down before burning.

During a burn year on sites occupied by Taylor's checkerspot, management activities will also be limited for adjacent units of the site. For example, if one-third of the site is burned, the remaining unburned portion of the site will not be mowed so that the maximum area affected by management activities is no more than one-third of the site, unless the Service determines that those additional management activities have a very low likelihood of directly impacting Taylor's checkerspot.

When using prescribed fire as a management technique, additional consideration of subsequent annual treatments for the ABU will be necessary. That is, in the year following a burn, management of that unit will be limited to manual techniques and herbicide applications.

Occupied habitat that is scheduled to be burned may be used as a source for collecting Taylor's checkerspot eggs and larvae if an appropriate holding/rearing facility or translocation site is available. Any Taylor's checkerspot eggs and larvae that are collected will be used to further research on Taylor's checkerspot. Research efforts may provide information that will improve the effectiveness of captive rearing, reintroduction, or augmentation techniques for future use at historical or declining sites that currently do not support a viable population, or to increase the stability of existing populations. While it is acknowledged that this activity may occur on covered lands under this Agreement, a separate ESA section 10(a)(1)(A) permit will be required for any associated collection, rearing and reintroduction of Taylor's checkerspot.

v. Herbicide use

Herbicide application, used alone or in combination with other methods, may be used where appropriate to provide a feasible and effective strategy for controlling invasive species and preparing sites for desirable plant restoration. Specific herbicides anticipated for restoration and management under this Agreement in occupied habitat, or where occupied habitat may be affected, are described below. These herbicides were selected based upon their efficacy and relatively low risk to federally listed species when applied as described. In addition to the guidelines specified for each herbicide below, the best management practices (BMPs) at the end of this section apply to all herbicide use anticipated under this Agreement.

At sites supporting Taylor's checkerspot, the size of the area treated with herbicides will generally be limited to one quarter to one third of the occupied habitat actively used by butterflies. Larger areas of treatment would only occur if the risk to butterflies was minimal and it was necessary to achieve the management objectives for the site. The seasonal use restrictions discussed below apply on sites where

Taylor's checkerspot are present. Impacts to larval host plants should be avoided by selective use of chemicals, timing of application, and use of more precise application techniques such as spot spraying or wick application. If Taylor's checkerspot are not present, herbicide application may occur during other times of the year. For road maintenance as provided elsewhere in this Agreement, herbicide use may be used during other road maintenance activities.

Triclopyr
Product(s): Garlon 3A® only with no surfactants
Purpose: This chemical is a systemic herbicide used to control woody and broadleaf plants (OSU 2002). For the purposes of this Agreement, it may be used to control woody species, including both native and non-native tree and shrub species (e.g., Oregon ash, Oregon white oak, English hawthorn, serviceberry, cascara, etc.) in order to maintain an early seral native prairie community (i.e., suitable habitat for the covered species).
Application methods: This chemical will be hand painted or directly wicked onto fresh cut stumps, within 24 hours of cutting. For broadleaf weed control, it will be applied primarily via spot foliar application using a hand-held wand or mounted on an all-terrain vehicle. No spraying will occur.
Surfactants: None.
Seasonal use: Application timing is limited to the summer dry period after native plants have senesced (typically August 15-October 31), and to allow for residual chemical to break down prior to fall rains.

Glyphosate
Product(s): Rodeo®, Roundup®, Aqua-Master® and Accord® with vegetative-based surfactant
Purpose: This chemical is a broad-spectrum, nonselective systemic herbicide used to control annual and perennial plants, including grasses, forbs, and woody species (Henderson et al. 2010). For the purposes of this Agreement, it will be used to control non-native and invasive grasses and forbs (e.g., reed canary grass, tall oatgrass, bull thistle, etc.).
Application methods: This chemical will primarily be applied via spot foliar application using a hand-held wand (backpack or ATV-mounted) or ATV-towed weed wipers. ATV or tractor-mounted boom sprayers will only be used in limited areas dominated by invasive plants.
Surfactants: Only vegetable oil-based surfactants will be utilized, such as Super Spread MSO (principal functioning agents: methyl soyate and nonylphenol ethoxylate blend).
Seasonal use: Application timing will be limited to February 1-August 15 for wipe-on application to allow for control of tall invasives while protecting native plants. Spray and wipe-on application will be permitted August 15-October 31, which is during the summer dry period after most native plants have senesced, and will allow for residual chemical to break down prior to fall rains.

2, 4-D Amine

Product(s): Weedar 64®) with vegetative-based surfactant
Purpose: This chemical is a systemic herbicide used to control many types of broadleaf plants (Jervais et al. 2008). For the purposes of this Agreement, it will be used to treat non-native and invasive broadleaf species (e.g., Canada thistle, tansy ragwort, etc.).
Application methods: This chemical will primarily be applied via spot foliar application using a hand-held wand (from either a backpack or ATV-mounted sprayer). ATV or tractor-mounted boom sprayers will only be used in limited areas dominated by invasive plants. Spot application may occur on cut stems utilizing mow and spray or wipe implements such as a Brown Brush Monitor.
Surfactants: Only vegetable oil-based surfactants will be utilized, such as Super Spread MSO (principal functioning agents: methyl soyate and nonylphenol ethoxylate blend).
Seasonal use: Application timing is limited to February 1–August 15 for wipe-on application to allow for control of tall invasives while protecting native plants. Spray and wipe-on application will be permitted August 15-October 31, which is during the summer dry period after most native plants have senesced, and will allow for residual chemical to break down prior to fall rains.

Clethodim
Product(s): Envoy® only with vegetative-based surfactant
Purpose: This chemical is a selective post-emergent herbicide used to control annual and perennial grasses (Medlin no date). For the purposes of this Agreement, it will be used to treat non-native and invasive grass species (e.g., tall fescue, tall oatgrass, false brome, etc.)
Application methods: This chemical will primarily be applied via spot foliar application using a hand-held wand (backpack or ATV mounted) or ATV-towed weed wiper. Limited application may occur utilizing ATV or tractor-mounted boom sprayers on limited areas dominated by invasive plants.
Surfactants: Only vegetable oil-based surfactants will be utilized, such as Super Spread MSO (principal functioning agents: methyl soyate and nonylphenol ethoxylate blend).
Seasonal use: Application timing is limited to June 1-October 25 on upland prairie sites and August 1-October 25 on wet prairie sites. Though native forbs may have not completely senesced by this time of year, they should not be affected by application of this herbicide since it is grass-specific. Applications during these periods will allow for residual chemical to break down prior to fall rains.

Sethoxydim and Fluazifop-P-butyl
Product(s): Poast® or Fusilade II with vegetative-based surfactant
Purpose: These chemicals are selective post-emergent herbicides used to control annual and perennial grasses (Medlin no date). For the purposes of this Agreement, these chemicals will be used to control non-native grasses (e.g., tall fescue, tall oatgrass, false brome, etc.)
Application methods: These chemicals will primarily be applied via spot foliar application using a hand-held wand (backpack or ATV mounted) or ATV-towed

weed wipers. Limited application may occur utilizing ATV or tractor-mounted boom sprayers on limited areas dominated by invasive plants.
Surfactants: Only vegetable oil-based surfactants will be utilized, such as Super Spread MSO (principal functioning agents: methyl soyate and nonylphenol ethoxylate blend).
Seasonal use: Application timing is limited to the early season from February 15–May 15, as well as application between June 1-October 25 on upland prairie sites, and August 1-October 25 on wet prairie sites. Though native forbs may have not completely senesced by this time of year, they should not be affected by application of this herbicide since it is grass-specific. Applications during these periods will allow for residual chemical to break down prior to fall rains.

The BMPs below are designed to further reduce the risk of impacting non-target species, including Taylor's checkerspots. All applicable BMPs are to be followed whenever herbicides are used, and must be incorporated into any management action that involves the use of herbicides (except related to road maintenance as provided elsewhere in this Agreement).

a) All manufacturer's label requirements and restrictions will be followed and recommendations will be used as appropriate (e.g., regarding application rates, use of surfactants, marking dies, foaming agents, weather conditions, personal protective equipment, etc.), while maintaining consistency with the guidelines described herein.

b) Herbicides will only be applied by licensed herbicide applicators.

c) Most activities covered under this Agreement will occur on uplands, but in any case, herbicide treatments will occur at least 40 meters (120 feet) away from any ephemeral or perennial watercourse unless otherwise needed to achieve project objectives.

d) Herbicide application will only occur during calm dry weather conditions to prevent drift and runoff; no spraying will occur during windy conditions (i.e., over seven miles per hour), when precipitation is occurring or has been forecasted to occur within 24 hours of application, or if an inversion is occurring.

e) Sprayers will be set to minimize drift (e.g., with low nozzle pressure, large droplet size, low nozzle height) to the extent practical and feasible.

f) Dyes may be used for herbicide applications to ensure complete and uniform treatment of invasive plants as well as to immediately indicate drift issues.

g) In areas inside the baseline area where larvae are known or assumed to be present, herbicide may only be applied when the larvae are in diapause (generally August 1 -January 15). If Taylor's checkerspot become

established outside of the baseline area, herbicide application directly onto eggs larvae, or adults should be avoided, where practicable. If herbicide application is determined to be necessary to improve habitat conditions during the visible presence of these life stages (typically Feb.-June), application should occur on no more than one-half the total area occupied outside of the baseline in any given year.

The use of herbicides to control invasive plants and other unwanted vegetation is a management tool for restoration under this Agreement. Since there are areas of scientific and management uncertainty, some future actions may require refinement or change over time as new information or data from monitoring is available.

Changes in existing treatments or use of alternative techniques may be warranted to achieve conservation and recovery goals. Alternative herbicides to those above described may be used provided that they are likely to have similar effects to covered species. Any changes in the use of herbicides would be analyzed for impacts to listed species and critical habitat and consultation would be reinitiated as appropriate. If herbicides with entirely new chemical properties are proposed for use, an amendment to this Agreement may be required.

vi. Solarization and shade cloth

Solarization involves the removal of heavily infested weed patches by tilling, then covering an area with plastic during the growing season. Elevated temperatures kill most of the target species. Follow-up with hand weeding may be necessary. Treated areas are typically seeded with native species.

Use of shade cloth is a technique to control monotypic weed infestations. Dark cloth is placed and fastened to the ground with stakes; the plants under the cloth die, and the cloth is subsequently removed after two years. Solarization and use of shade cloth will only be implemented in habitat that is not occupied by Taylor's checkerspots.

B. Revegetation

Larval host and adult nectar plants may be seeded or planted to increase their relative availability, and to help reduce the cover and resist the invasion of less desirable vegetation. This may occur in occupied or non-occupied areas. Priority shall be placed on increasing larval host plant density and abundance in areas adjacent to or between known egg-laying locations.

Revegetation will involve many of the treatments to remove exotic vegetation as previously described, before and after planting desired larval host and nectar plants. This work will be usually conducted outside of the adult flight period of March-May and outside of occupied habitat in order to avoid or minimize potential impacts to eggs or

larvae. Spot treatments may be used to control monotypic weed patches. Revegetation may occur on all enrolled lands each year.

Seed and plant parts may be collected to create nursery stock for restoration projects, and a variety of native forbs. If listed species occur at a site where collection of seeds or plant parts of non-listed plants is to take place, care will be taken to avoid trampling or otherwise harming listed species.

C. Threat reduction

Opportunities to include measures that further reduce threats and improve conditions for Taylor's checkerspot will be evaluated on an annual basis based upon existing habitat conditions, effectiveness of management actions, and available funding. On-going powerline corridor management activities by BPA and Consumers Power may adversely impact Taylor's checkerspot. The Service will inform these utilities of management activities being undertaken to protect and improve habitat conditions when they propose to conduct work on Crestmont Farm property.

D. Surveys and monitoring

Surveys will be conducted by individuals that are deemed to be qualified by the Service to monitor responses to management activities and to assess population trends. Taylor's checkerspot surveys may be done using a walking tally of all butterflies within a five-meter radius of the observer along transects. Monitoring of the larval host plant may be accomplished by measuring the number of plants per square meter along a series of transects or plots. Other methods may be used as appropriate to meet the purposes of the monitoring effort upon approval by the Service. The Service, or its agents, will conduct surveys annually, as funding allows; Crestmont Farm will be provided with the reports and data related to all surveys.

Monitoring surveys, if conducted in the any areas covered by this Agreement, will be conducted over the entire range enrolled lands each year to assess local population trends and use areas. Handling of individuals of these species is only to be done by individuals specifically permitted for this purpose and is to be kept to the minimum needed to complete the surveys.

9. RESPONSIBILITIES OF THE PARTIES

A. Crestmont Farm agrees to:

i. Upon execution of the Agreement and satisfaction of all other applicable legal requirements, hold an enhancement of survival permit in accordance with ESA section 10(a)(1)(A), authorizing incidental take of the covered species as a result of lawful activities on the enrolled property in accordance with the provisions of such permit and this Agreement. The term of the permit will be 10 years.

ii. In order to meet the net conservation benefit standard of Safe Harbor Agreements, Crestmont Farm agrees to not directly authorize or engage in management activities that would result in degradation of the baseline conditions.

iii. Reasonably assist in development, review and/or approval of annual or multi-year management plans that are consistent and compliant with the provisions in this Agreement and that provide for a net conservation benefit to Taylor's checkerspot.

iv. Reasonably allow Service's cooperators to carry out habitat restoration and/or management activities that are anticipated to produce a net conservation benefit for Taylor's checkerspots under an annual or multi-year management plan jointly approved by the Service and Crestmont Farm as funding becomes available.

v. Reasonably allow access to the enrolled property upon reasonable notice by the Service or other agreed-upon party for purposes related to this Agreement under an annual or multi-year management plan jointly approved by the Service and Crestmont Farm including, but not limited to, monitoring, research, management, restoration, and capture and removal of Taylor's checkerspot (i.e., eggs, larvae, pupae, or adults) for recovery purposes that include translocation within and outside of the covered lands, and captive propagation by qualified individuals.

vi. Reasonably work with adjoining landowners and powerline utility corridor easement holders to minimize adverse impacts to Taylor's checkerspot habitat while conducting routine land management activities such as logging, weed control, fence maintenance, and road maintenance, and coordinate on jointly-approved habitat restoration opportunities and other jointly-approved management plans within and adjacent to the powerline corridor.

vii. Reasonably cooperate with the Service or its agents to seek funding to conduct activities designed to benefit the covered species. Sources of these funds may be: USDA Farm Bill programs; BPA mitigation funds; the Service's Partners for Fish and Wildlife Program, Recovery Program; or other sources.

viii. Reasonably cooperate with the Service or its agents so they can either directly or through a designated responsible party prepare annual reports due no later than December 31st each year. At a minimum, annual reports shall include the items listed on the "Template – Annual Report" in Appendix 1.

ix. Notify the Service of any transfer of ownership within 30 days so that the Service can attempt to contact the new owner, explain the baseline responsibilities applicable to the covered lands on the property, and invite the new owner to continue the existing Agreement (or, at the option of the new owner, enter into a new one that would benefit listed species on the property). Crestmont Farm should notify the Service as far in advance as they can of the actual transfer of ownership.

x. Notify the Service 30 calendar days in advance of any planned activity by Crestmont Farm that Crestmont Farm reasonably anticipates will result in "take" (i.e. death, injury or other harm) of the covered species on the property. Notify the Service immediately of any unexpected known "take" within the covered lands. This includes "take" that result from management activities. Notification may be by letter, e-mail or phone. Advance notice pursuant to this paragraph shall be waived in case of emergency, including but not limited to fire, water damage, earthquake damage, or disruption of overground or underground electrical power.

xi. Notify the Service promptly of contact by BPA, Consumers Power, or other entities that are proposing to engage in activities that could be reasonably anticipated to result in "take" (i.e. death, injury or other harm) of the covered species. Specific activities would include any significant ground-disturbing or vegetation management activities in February and March.

xii. Seek to avoid significant roadbed maintenance activities in February and March to reduce impacts to larvae present feeding in the road. If significant roadbed maintenance is required in occupied areas in February and March, Crestmont Farm will notify the Service at least seven days in advance to provide an opportunity to move larvae off the road.

B. The Service agrees to:

i. Work cooperatively with the Crestmont Farm to jointly administer and implement the Agreement on actions that support mutual goals.

ii. Assist in development, review and/or approval of specific management actions proposed to be taken on the covered lands within each fiscal year.

iii. Provide Crestmont Farm and designees with technical assistance to the maximum extent practicable when requested or needed, although Crestmont Farm does not expect to directly conduct Taylor's checkerspot habitat enhancement operations in the covered lands.

iv. Actively pursue resources, if necessary, to implement actions described in the annual or multi-year plan, such as by providing funding and/or in-kind contributions (e.g. labor, materials and supplies) or seeking grants and support from other sources.

v. Ensure that impacts to cultural and historic resources due to activities to be carried out under this Agreement are avoided or otherwise in compliance with Section 106 of the National Historic Preservation Act.

vi. Carry out monitoring as described in this Agreement, as applicable. At a minimum, the Service, or designees thereof, will be responsible for making periodic site visits (every 1-3 years) to conduct the following compliance monitoring:

a. Ensure that agreed-upon conservation measures and management actions are being implemented as specified in this Agreement.

b. Assess habitat and species presence in relation to the baseline to determine whether or not conditions are being maintained or are improving for the covered species.

c. Determine whether or not take of covered species has occurred.

10. AGREEMENT DURATION

The Agreement becomes effective upon issuance by the Service of the section 10(a)(1)(A) enhancement of survival permit described in section 9 above and will be in effect for 10 years. The permit will have a term of 10 years, commensurate with the Agreement.

11. ASSURANCES REGARDING TAKE ASSOCIATED WITH COVERED SPECIES

Provided that such take is consistent with maintaining the baseline conditions identified in this Agreement, the enhancement of survival permit associated with this Agreement shall authorize Crestmont Farm or its authorized agents to take the covered species incidental to otherwise lawful activities in the following circumstances, as appropriate:

A. Implementing the conservation measures as specified in section 8 above;

B. Carrying out routine activities on or adjacent to the covered lands after conservation measures have been initiated;

C. Making any lawful use of the enrolled property after the conservation measures identified in this Agreement have been initiated.

Since baseline conditions are to be maintained, very little incidental take is likely to occur in the identified baseline areas where management restrictions will be in place to minimize the likelihood of take while trying to maintain and/or improve habitat conditions. For the purposes of this Agreement, we assume that occupied habitat could increase by up to four acres on the covered lands, provided some management occurs that results in the colonization of those acres by Taylor's checkerspots. However, the Parties to the Agreement are not bound to this estimate since colonization of new areas is speculative and the Service cannot to commit to future funding pending appropriations. A return to baseline could then result in a reduction of up to four acres of occupied habitat and all Taylor's checkerspots associated with those acres.

12. MODIFICATIONS

A. Modification of the Permit/Agreement

Crestmont Farm may propose amendments to the permit, as provided in 50 CFR 13.23. The Parties may propose amendment to the Agreement, as provided in 50 CFR

17.32(c)(5)(ii), by providing written notice to, and obtaining the written concurrence of, the other affected Party. Such notice shall include a statement of the proposed modification, the reason for it, and its expected results. The affected Party will have 30 days after receipt of such notice to respond to proposed modifications. Proposed modifications will become effective upon the written concurrence of other affected parties, after any public notification and regulatory review, if required.

B. Termination of the Agreement

As provided for in Part 12 of the Service's Safe Harbor Policy (64 FR 32717), Crestmont Farm may terminate the Agreement for circumstances beyond their control. In such circumstances, Crestmont Farm may return the enrolled property to baseline conditions even if the conservation measures identified in the Agreement have not been fully implemented, provided that Crestmont Farm gives the Service the notification required by section 9 above prior to carrying out any activity likely to result in the taking of the covered species. If Crestmont Farm wishes to terminate the Agreement for any other reason, including its sole discretion, Crestmont Farm may return the enrolled property to baseline conditions while following the relevant terms of the Agreement and thereafter the permit referenced in section 9 above shall immediately cease to be in effect.

If Crestmont Farm does not provide reasonable allowance or approvals for the Service, its cooperators, or powerline easement holders to carry out those activities identified above in Section 9. A, the Agreement would not be considered to be properly functioning and the Service reserves the right to terminate the Agreement under these circumstances following at least six months' notice to Crestmont Farm (during which time Crestmont Farm shall be allowed to address any such deficiencies and have the notice rescinded). During such notice period, Crestmont Farm may return the enrolled property to baseline conditions while following the relevant terms of the Agreement and thereafter the permit referenced in section 9 above shall immediately cease to be in effect.

Once the permit expires, the incidental take authorization for Taylor's checkerspots associated with this Agreement will cease to be in effect, and the complete section 9 prohibitions of the ESA will resume.

C. Baseline Adjustment

The baseline conditions set forth in section 6 above may, by mutual agreement of the Parties, be adjusted if, during the term of the Agreement and for reasons beyond the control of Crestmont Farm, the utilization of the enrolled property by the covered species or the quantity or quality of habitat suitable for or occupied by the covered species is reduced from what it was at the time the permit was issued.

13. OTHER MEASURES

A. Remedies

Each party shall have any remedies otherwise available to enforce the terms of this Agreement, except that no party shall be liable in damages for any breach of this Agreement, any performance or failure to perform an obligation under this Agreement or any other cause of action arising from this Agreement.

B. Dispute Resolution

The Parties agree to work together in good faith to resolve any disputes arising under this Agreement, and may use dispute resolution procedures agreed upon by all Parties.

C. Succession and Transfer

If Crestmont Farm transfers their interest in the covered lands to a non-Federal entity, the Service will regard the new owner as having the same rights and responsibilities with respect to the enrolled property as Crestmont Farm, if the new property owner agrees and commits in writing to become a party to this Agreement and subject to the permit referenced in section 9 above through signing a copy of the Agreement.

D. Availability of Funds

Implementation of this Agreement is subject to the requirements of the Federal Anti-Deficiency Act and the availability of appropriated funds. Nothing in this Agreement will be construed by the Parties to require the obligation, appropriation, or expenditure of any funds from the U.S. Treasury. The Parties acknowledge that there will be no obligation under this Agreement to expend any Federal agency's appropriated funds unless and until an authorized official of that agency affirmatively commits to such expenditure in writing.

E. Relationship to Other Agreements

If Crestmont Farm's covered lands under this Agreement are, or become, related to any other Federal agreement(s), such as a Cooperative Agreement for a Partners for Fish and Wildlife or USDA Farm Bill program, the nature of the relationship between the agreements shall be complimentary with this Agreement and shall seek to operate toward the mutual objectives of such other agreements, unless otherwise agreed to by the principals of the other agreements and this Agreement.

F. No Third-Party Beneficiaries

This Agreement does not create any right or interest in any member of the public as a third-party beneficiary, nor shall it authorize anyone not a party to this Agreement to maintain any cause of action pursuant to the provisions of this Agreement. The duties, obligations, and responsibilities of the Parties to this Agreement with respect to third parties shall remain as imposed under existing law.

G. Other Listed Species, Candidate Species, and Species of Concern

Although the Service regards it as unlikely, the possibility exists that other listed, proposed, or candidate species, or species of concern may occur in the future on enrolled property as a direct result of the on-the-ground activities specified in section 8 above. If that occurs and Crestmont Farm so requests, the Parties may agree to amend the Agreement and associated permit to cover additional species and to establish appropriate baseline conditions for such other species.

H. Notices and Reports

Any notices and reports, including monitoring and annual reports, required by this Agreement shall be delivered to the persons listed below, as appropriate:

State Supervisor
Oregon Fish and Wildlife Office
U.S. Fish and Wildlife Service
2600 SE 98th Avenue, Suite 100
Portland, Oregon 97266
Phone number: (503) 231-6179

14. REFERENCES

Dornfeld, E.J. 1980. The butterflies of Oregon. Timber Press, Forest Grove, Oregon. 276 pp.

Henderson, A. M.; Gervais, J. A.; Luukinen, B.; Buhl, K.; Stone, D. 2010. *Glyphosate General Fact Sheet*; National Pesticide Information Center, Oregon State University Extension Services. http://npic.orst.edu/factsheets/glyphogen.html

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Oregon Department of Fish and Wildlife. 2006. The Oregon Conservation Strategy. Oregon Department of Fish and Wildlife, Salem, Oregon.

Oregon State University. 2002. National Pesticide Information Center. General Fact Sheet - Triclopyr. Oregon State University, Corvallis, Oregon. Web site address: http://npic.orst.edu/factsheets/triclogen.pdf.

United States Fish and Wildlife Service. 1999. Safe Harbor Agreements and Candidate Conservation Agreements with Assurances. Final Rule. 64 FR 32706.

United States Fish and Wildlife Service and National Oceanic and Atmospheric Administration. 1999. Announcement of Final Safe Harbor Policy. 64 FR 32717.

United States Fish and Wildlife Service. 2013. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Taylor's Checkerspot Butterfly and Threatened Status for the Streaked Horned Lark. Final Rule. 78 FR 61452.

United States Fish and Wildlife Service. 2013. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Taylor's Checkerspot Butterfly and Streaked Horned Lark. Final Rule. 78 FR 61506.

United States Fish and Wildlife Service. 2015. Programmatic Restoration Opinion for Joint Ecosystem Conservation by the Services (PROJECTS) program. Oregon Fish and Wildlife Office. United States Fish and Wildlife Service. Portland, Oregon

15. SIGNATURES

IN WITNESS WHEREOF, THE SERVICE HERETO has executed this Safe Harbor Agreement to be in effect as of the date that the permit referred to in section 9 above is issued.

_____	_____
State Supervisor, Oregon Fish and Wildlife Office U.S. Fish and Wildlife Service	Date
_____	_____
Ed Easterling Crestmont Farm LLC	Date

APPENDICES

Appendix 1: Template - Annual Report

TEMPLATE

Annual Report for Crestmont Farm's Safe Harbor Agreement for Taylor's Checkerspots

Permittee's Name: Crestmont Farm LLC

Permit Tracking Number: TE-XXXXXX-0

Location: Benton County, Oregon

Covered Species: Taylor's checkerspot (*Euphydryas editha taylori*)

Management and Conservation Actions
Instructions: Provide a summary of significant activities and accomplishments for the period, including actions taken to date on enrolled lands in relation to each of the management, conservation, and road maintenance activities described in the Agreement and Permit.

Monitoring Program
Instructions: Describe in general terms the monitoring program's results and findings for the current year. Annual reports are designed to provide information concerning the effects and effectiveness of the Agreement's conservation actions on the covered species, as well as to determine if the conservation actions the Permittee undertakes meet the Agreement's "standard" of benefiting the covered species. The monitoring report will document any changes in the covered species population or the habitat associated with that species on the covered lands over time, and will denote whether the data provided is from the Permittee or other specific individual or entity.

Date of the Report: [Due on or before December 31st, for the prior fiscal year]
Annual period covered:

Date Annual Report was Received:_____ **Date Annual Report was Reviewed**: _____

Signature of Reviewer: _____

Printed Name and Phone # of Reviewer: _____

Map 1: Crestmont Farm Covered Area

Map 2: Taylor's Checkerspot Baseline Areas